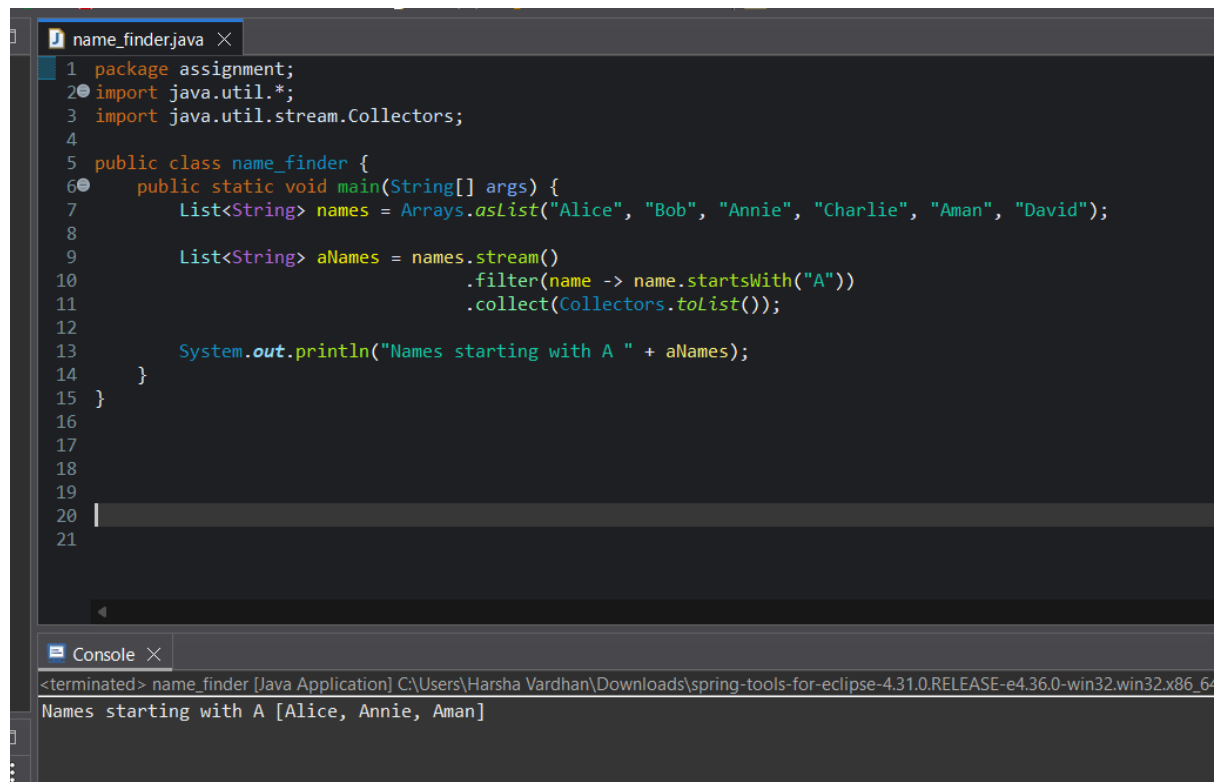


Java_Collections_Assignment

1.Name_Finder :

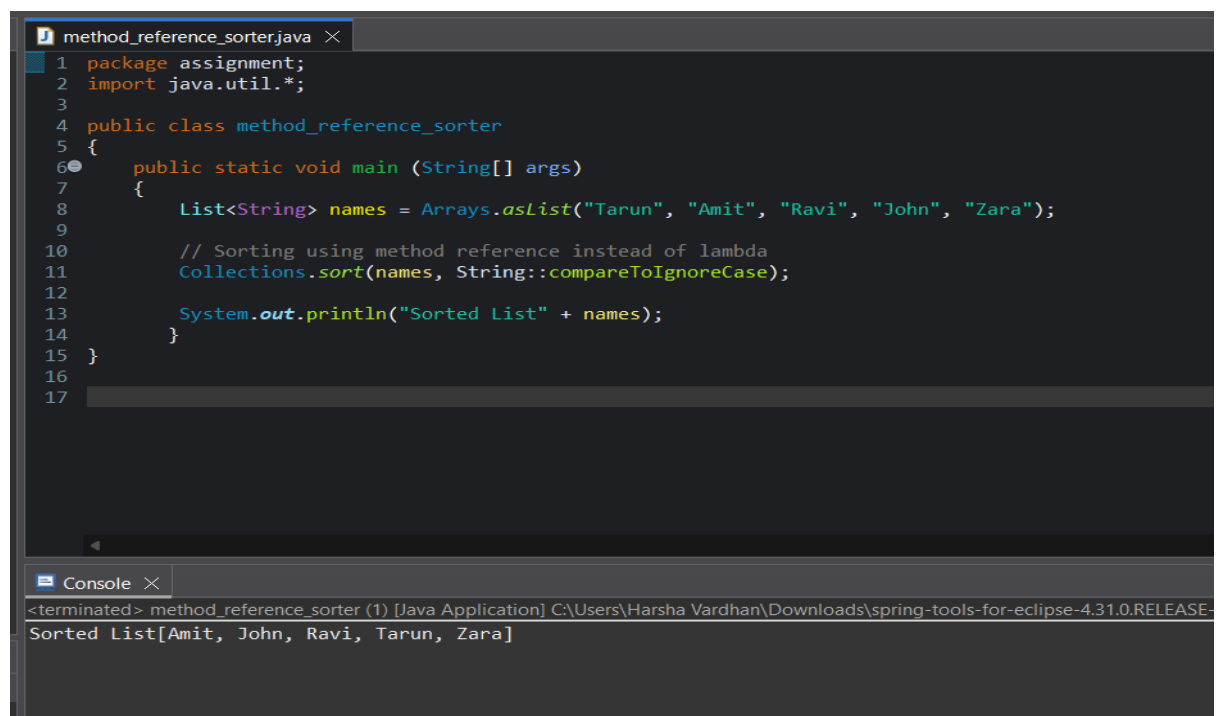


```
1 package assignment;
2 import java.util.*;
3 import java.util.stream.Collectors;
4
5 public class name_finder {
6     public static void main(String[] args) {
7         List<String> names = Arrays.asList("Alice", "Bob", "Annie", "Charlie", "Aman", "David");
8
9         List<String> aNames = names.stream()
10             .filter(name -> name.startsWith("A"))
11             .collect(Collectors.toList());
12
13         System.out.println("Names starting with A " + aNames);
14     }
15 }
16
17
18
19
20
21
```

Console

<terminated> name_finder [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.win32.x86_64
Names starting with A [Alice, Annie, Aman]

2.Method_Reference_Sorter :



```
1 package assignment;
2 import java.util.*;
3
4 public class method_reference_sorter
5 {
6     public static void main (String[] args)
7     {
8         List<String> names = Arrays.asList("Tarun", "Amit", "Ravi", "John", "Zara");
9
10        // Sorting using method reference instead of lambda
11        Collections.sort(names, String::compareToIgnoreCase);
12
13        System.out.println("Sorted List" + names);
14    }
15 }
16
17
```

Console

<terminated> method_reference_sorter (1) [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.win32.x86_64
Sorted List[Amit, John, Ravi, Tarun, Zara]

3.Last3_Searchers :

```
last_3_searches.java ×
1 package assignment;
2
3 import java.util.ArrayDeque;
4
5 public class last_3_searches {
6     public static void main(String[] args) {
7         ArrayDeque<String> searchBox = new ArrayDeque<>();
8
9         addSearch(searchBox, "Java");
10        addSearch(searchBox, "Python");
11        addSearch(searchBox, "C");
12        addSearch(searchBox, "JavaScript"); // This should remove "Java"
13
14        System.out.println("Last 3 Searches: " + searchBox);
15    }
16
17    public static void addSearch(ArrayDeque<String> deque, String search) {
18        if (deque.size() == 3) {
19            deque.removeFirst(); // Remove oldest
20        }
21        deque.addLast(search); // Add new search
22    }
23 }
```

Console ×

<terminated> last_3_searches [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-v

Last 3 Searches: [Python, C, JavaScript]

4.Grocery_Line_Shuffle :

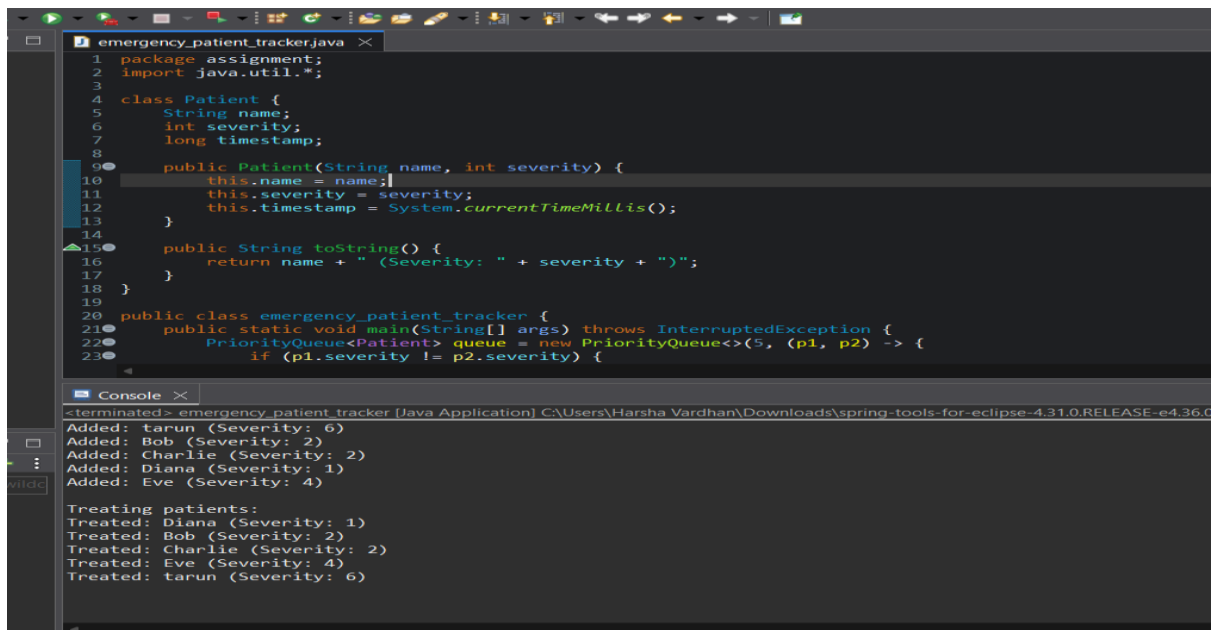
```
grocery_line_shuffle.java ×
1 package assignment;
2 import java.util.ArrayDeque;
3
4 public class grocery_line_shuffle {
5     public static void main(String[] args) {
6         ArrayDeque<String> queue = new ArrayDeque<>();
7
8         enterQueue(queue, "tarun"); // Odd length → end
9         enterQueue(queue, "tejas"); // Even length → front
10        enterQueue(queue, "tej"); // Even → front
11        enterQueue(queue, "vayu"); // Odd → end
12
13        System.out.println("Queue Order: " + queue);
14    }
15
16    public static void enterQueue(ArrayDeque<String> queue, String name) {
17        if (name.length() % 2 == 0) {
18            queue.addFirst(name); // Even length → front
19        } else {
20            queue.addLast(name); // Odd length → end
21        }
22    }
23 }
```

Console ×

<terminated> grocery_line_shuffle [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36

Queue Order: [vayu, tarun, tejas, tej]

5. Emergency_Patient_Tracker :



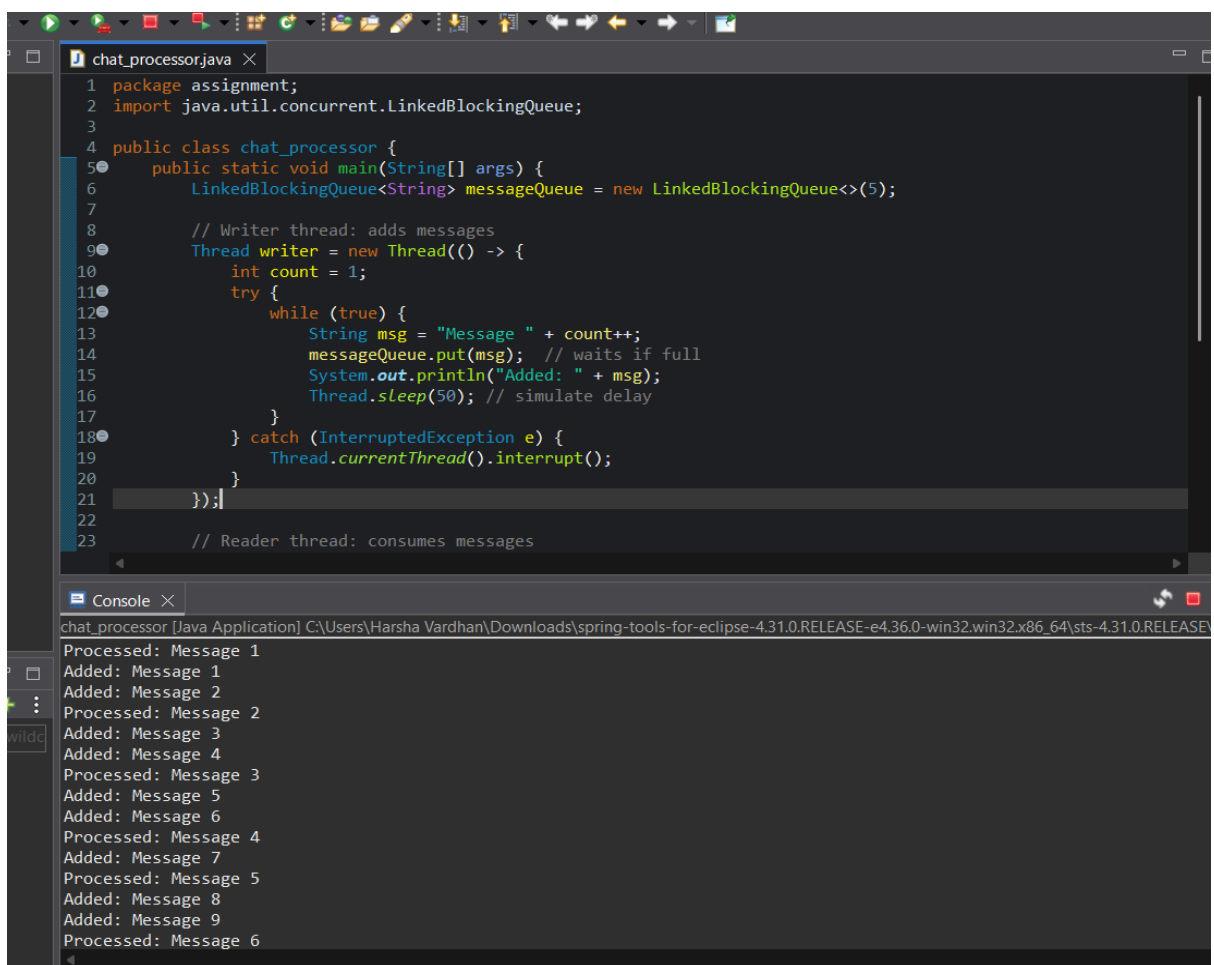
```
1 package assignment;
2 import java.util.*;
3
4 class Patient {
5     String name;
6     int severity;
7     long timestamp;
8
9     public Patient(String name, int severity) {
10         this.name = name;
11         this.severity = severity;
12         this.timestamp = System.currentTimeMillis();
13     }
14
15     public String toString() {
16         return name + " (Severity: " + severity + ")";
17     }
18 }
19
20 public class emergency_patient_tracker {
21     public static void main(String[] args) throws InterruptedException {
22         PriorityQueue<Patient> queue = new PriorityQueue<>(5, (p1, p2) -> {
23             if (p1.severity != p2.severity) {
```

Console Output:

```
<terminated> emergency_patient_tracker [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0
Added: tarun (Severity: 6)
Added: Bob (Severity: 2)
Added: Charlie (Severity: 2)
Added: Diana (Severity: 1)
Added: Eve (Severity: 4)

Treating patients:
Treated: Diana (Severity: 1)
Treated: Bob (Severity: 2)
Treated: Charlie (Severity: 2)
Treated: Eve (Severity: 4)
Treated: tarun (Severity: 6)
```

6. Chat_Processor :



```
1 package assignment;
2 import java.util.concurrent.LinkedBlockingQueue;
3
4 public class chat_processor {
5     public static void main(String[] args) {
6         LinkedBlockingQueue<String> messageQueue = new LinkedBlockingQueue<>(5);
7
8         // Writer thread: adds messages
9         Thread writer = new Thread(() -> {
10             int count = 1;
11             try {
12                 while (true) {
13                     String msg = "Message " + count++;
14                     messageQueue.put(msg); // waits if full
15                     System.out.println("Added: " + msg);
16                     Thread.sleep(50); // simulate delay
17                 }
18             } catch (InterruptedException e) {
19                 Thread.currentThread().interrupt();
20             }
21         });
22
23         // Reader thread: consumes messages
```

Console Output:

```
chat_processor [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.win32.x86_64\sts-4.31.0.RELEASE
Processed: Message 1
Added: Message 1
Added: Message 2
Processed: Message 2
Added: Message 3
Added: Message 4
Processed: Message 3
Added: Message 5
Added: Message 6
Processed: Message 4
Added: Message 7
Processed: Message 5
Added: Message 8
Added: Message 9
Processed: Message 6
```

7.Stage_Task_Runner :

```
stage_task_runner.java X
1 package assignment;
2 import java.util.concurrent.LinkedBlockingQueue;
3
4 class Task {
5     int id;
6     String description;
7
8     public Task(int id, String description) {
9         this.id = id;
10        this.description = description;
11    }
12
13    public String toString() {
14        return "Task{id=" + id + ", description='" + description + "'}";
15    }
16 }
17
18 public class stage_task_runner {
19     public static void main(String[] args) throws InterruptedException {
20         LinkedBlockingQueue<Task> stage1 = new LinkedBlockingQueue<>();
21         LinkedBlockingQueue<Task> stage2 = new LinkedBlockingQueue<>();
22
23         // Add tasks to stage 1
24
25         <terminated> stage_task_runner [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.wi
26 Processing in Stage 1: Task{id=1, description='Task 1'}
27 Processing in Stage 1: Task{id=2, description='Task 2'}
28 Processing in Stage 1: Task{id=3, description='Task 3'}
29 Processing in Stage 1: Task{id=4, description='Task 4'}
30 Processing in Stage 1: Task{id=5, description='Task 5'}
31 Processing in Stage 2: Task{id=2, description='Task 2'}
32 Processing in Stage 2: Task{id=4, description='Task 4'}
```

8.Recent_App_Memory :

```
recent_app_memory.java X
1 package assignment;
2 import java.util.LinkedList;
3
4 public class recent_app_memory {
5     public static void main(String[] args) {
6         LinkedList<String> recentApps = new LinkedList<>();
7
8         openApp(recentApps, "WhatsApp");
9         openApp(recentApps, "YouTube");
10        openApp(recentApps, "Instagram");
11        openApp(recentApps, "WhatsApp"); // Move to top
12        openApp(recentApps, "Twitter");
13        System.out.println("Recent Apps: " + recentApps);
14    }
15
16    public static void openApp(LinkedList<String> list, String app) {
17        list.remove(app); // Remove if already opened
18        list.addFirst(app);
19    }
20 }
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```

9.Print_Manager :

```
print_manager.java X
1 package assignment;
2 import java.util.concurrent.ArrayBlockingQueue;
3
4 public class print_manager {
5     public static void main(String[] args) {
6         ArrayBlockingQueue<String> printQueue = new ArrayBlockingQueue<>(3);
7
8         addPrintJob(printQueue, "Job1");
9         addPrintJob(printQueue, "Job2");
10        addPrintJob(printQueue, "Job3");
11        addPrintJob(printQueue, "Job4"); // This should be skipped (queue full)
12        addPrintJob(printQueue, "Job4");
13        // Print jobs one by one
14        while (!printQueue.isEmpty()) {
15            String job = printQueue.poll();
16            System.out.println("Printing: " + job);
17        }
18    }
19
20    public static void addPrintJob(ArrayBlockingQueue<String> queue, String job) {
21        if (!queue.offer(job)) {
22            System.out.println("Queue full. Skipping: " + job);
23        }
24    }
25 }
26
```

```
Console X
<terminated> print_manager [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.win32.x86
Queue full. Skipping: Job4
Queue full. Skipping: Job4
Printing: Job1
Printing: Job2
Printing: Job3
```

10.Undo_Stack :

```
undo_stack.java X
1 package assignment;
2 import java.util.Stack;
3
4 public class undo_stack {
5     public static void main(String[] args) {
6         Stack<String> commandStack = new Stack<>();
7         Stack<String> redoStack = new Stack<>();
8
9         // Add commands
10        commandStack.push("Open");
11        commandStack.push("Edit");
12        commandStack.push("Save");
13
14        System.out.println("Commands: " + commandStack);
15
16        // Undo last command
17        String undone = commandStack.pop();
18        redoStack.push(undone);
19
20        System.out.println("After Undo: " + commandStack);
21
22        // Redo last undone command
23        commandStack.push(redoStack.pop());
24    }
25 }
```

```
Console X
<terminated> undo_stack [Java Application] C:\Users\Harsha Vardhan\Downloads\spring-tools-for-eclipse-4.31.0.RELEASE-e4.36.0-win32.win32.x86
Commands: [Open, Edit, Save]
After Undo: [Open, Edit]
After Redo: [Open, Edit, Save]
```